USSR

FILIPPOVICH, V. I., SHUMIKHIN, S. L., Scientific Research Institute for Physiology of Children and Adolescents, Academy of Pedagogical Sciences USSR, and GRISHIN, V. N., Moscow Institute of Energetics

"A Method for Research on Human Motor Behavior Under Changing (Stochastic) Conditions"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 2, 1972, pp 66-69

Abstract: This method permits the study of human motor behavior under conditions which demand well-timed and precise movements of varying degrees of complexity for the purpose of learning how to increase man's ability to control his movements under various conditions. The method employs the following apparatus (fig. 1): The apparatus consists of two identical, independent assemblies, each containing two concentric rotating shafts, and a tensometric platform one meter square. The two assemblies, placed 2.5-3m apart, rotate two horizontal rods which serve as obstacles. The height and speed of the rods will depend on the parameters of the movement problem. The height of the lower rods is variable from 5cm to 1m, the upper, from 1-2m. The speed of rotation is variable from 10-120 rpm. A safety device protects the subject in the event of contact with any rod. The spatial

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FILIPPOVICH, V. I., et al., Teoriya i Praktika Fizicheskoy Kul'tury, No 2, 1972, pp 66-69

parameters of the subject's movements are registered by a pickup which frequency modulates a signal generator according to capacitance changes between antennas (mounted on the rods) and the subject. The signal is detected, amplified, and recorded. The tensometric platform records reactive forces to an accuracy of 5kg. The sequence of rotation of the rods is determined by a program which may be changed during operation. An ink recorder (USCh-8) and oscillograph (K-105) are used for recording data. Measurement devices for collecting data to determine individual characteristics and adaptive behavior, as well as for data on normal bodily functions, may be simultaneously employed. The apparatus may be used for training.

USSR

ALEKSEYEVSKIY, N. YE., TSEBRO, V. I., FILIPPOVICH, YE. I., Institute of Physical Problems, Academy of Sciences USSR

"Superconductivity of Beryllium Films Evaporated Together With Zinc Etioporphyrin"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 13, No. 5, 5 Mar 71, pp 247-250

Abstract: The critical temperature of beryllium films evaporated together with zinc etioporphyrin (Zn-ep) on a substrate kept at liquid helium temperature was investigated. It is noted that beryllium films condensed on a cold substrate transform into the semiconducting state in the temperature range 5.4-8.6°K and that the magnitude of the critical temperature is a function of film thickness. The possibility of raising the transition temperature with a joint evaporation of a metallic and nonmetallic component has been discussed in the literature, and the use of Zn-ep as the nonmetallic component seemed of additional interest, since Zn-ep is one of the possible objects in which the electron-electron mechanism of superconductivity could be observed. A film with a thickness of ~500 Å was produced and the critical temperature of this film was equal to 10.2°K. Besides the films

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Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki, Vol. 13, No. 5, 5 Mar 71, pp 247-250

obtained by joint evaporation of Be and Zn-ep, films were prepared with laminar evaporation of Be and Zn-ep. Films were prepared with layer-by-layer evaporation of Be and Zn-ep. Measurements showed that the critical temperature of 7.7°K did not change with the addition of other layers from the critical temperature of the first layer of Be. The increase in critical temperature in films made with the joint evaporation of Be and zinc etioporphyrin is ascribed to the appearance of the electron-electron mechanism of superconductivity, and it is also hypothesized that a layer consisting of small crystals of Be separated by Zn-ep has a high transition temperature as a result of three-dimensional quantization of electrons in Be crystals. To check the validity of this hypothesis, experiments were conducted in which joint evaporation of Be and KCl was carried out. The results show that in this case the layers obtained by joint evaporation have high critical temperatures which are independent of the thickness of the layer. These layers also do not have a critical thickness, and superconductivity was maintained in them up to a thickness of ~1000 Å. It was also noted that these layers remain superconducting even after heating up to a temperature close to room temperature.

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UDC 547.26'118

USSR

PREDVODITELEV, D. A., URVANTSEVA, G. A., FILIPPOVICH, Yu. B., and NIFANT'YEV, E. Ye., Moscow Pedagogical Institute Imeni V. I. Lenin

"Ethyleneamidophosphites of Glycerine Derivatives. III. Sulfohydrolysis of Ethylenemethylamidophosphites of 1,2-Isopropylideneglycerine"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1799-1801

Abstract: Sulfohydrolysis of the cyclic ethylenemethylamidophosphite of 1,2-isopropylideneglycerine gave methylcolaminoglycerophosphothionophosphite. Based on this product a novel analog of natural glycerophospholipids was obtained containing a thiophosphoryl group and a phosphorus-carbon bond in its structure. A new synthetic route for 3-N-methylethyleneamidothionophosphate was developed started from 1,2-isopropylideneglycerine thionophosphite. It was shown that the sulfohydrolysis of ethylenemethylamidophosphites is different from the hydrolysis process.

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UDC 541.67:547.879

USSR

PREDVODITELEV, D. A., AFANAS'YEVA, D. N., FILIPPOVICH, YU. B., NIFANT'YEV, E. YE.

"New Method of Synthesis and Stereochemistry of 1,3-alkylene thiophosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 73-77

Abstract: A new procedure is proposed for synthesizing 1,3-alkylene thiophosphites by the sulfohydrolysis of amides of alkylene phosphorous acids. The nuclear magnetic resonance method and thin-layer chromatography were used to detect the phenomenon of stereoisomerism in the series of cyclic thiophosphites. The stereochemical result of synthesizing the thiophosphites depends on the type of initial compound and the chosen reaction. By comparing the calculated and determined dipole moments it was found that the preferred configuration of the 1,3-alkylene phiophosphites is the chair configuration with equatorial orientation of the thiophosphoroyl group.

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1/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE CHARACTERISTICS OF THE FUNCTIONAL STATE OF THE BRAIN INGLIOMAS OF THE MIDDLE STRUCTURES OF THE HEMISPHERES -U-

AUTHOR-(02)-FILIPPUCHEVA, N.A., FALLER, T.O.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 5, PP 646-654

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, CELL PHYSIOLOGY, BLOOD CIRCULATION, INTRACRAINIAL PRESSURE, HYPOXIA, AUTOPSY, CENTRAL NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0253 STEP NO--UR/0246/70/070/005/0646/0654

CIRC ACCESSION NO--AP0117505

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 026

CIRC ACCESSION NO--AP0117505

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED PHYSIOLOGICALLY THE BRAIN ACTIVITY IN AN AFFECTION OF TWO LEVELS OF THE MIDDLE STRUCTURES: THE AREA OF THE 3 VENTRICULE (3 CASES) AND THE CALLOUS PERIVENTRICULAR SEPTAL AREA (6 CASES). IN ALL CASES IN AN INSIGNIFICANT EXPRESSION OF THE INTRACRANIAL HYPERTENSION THERE WERE STABLE CHANGES OF CONSCIOUSNESS AND THE EXISTENCE OF AMNESTICAL SYNDROMES. THE DIAGNOSIS WAS CONFIRMED IN POSTMORTEM EXAMINATIONS. FOR PURPOSES OF DETERMINING THE BRAIN ACTIVITY THE FOLLOWING INDICES WERE SELECTED: (1) THE STATE OF THE STEM CORTICAL CORRELATIONS; (2) THE STATE OF THE CENTRAL REGULATION OF THE BRAIN AND PERIPHERAL CIRCULATION; (3) THE STATE OF THE CENTRAL REGULATION OF VOLUNTARY MOVEMENTS. THE AUTHORS COME TO THE CONCLUSION THAT THE BRAIN OF THE BRAIN OF THE ABOVE MENTIONED PATIENTS WORKED IN CONDITIONS OF EXPRESSED DISORDERED NONSPECIFIC AFFERENT EXCITATION FROM THE STEM AREA, AS A RESULT OF ITS PARTIAL BLOCKING; IN CRUDE PATHOLOGICAL STEM INFLUENCES; IN CONDITIONS OF STABLE DISORDERS OF CEREBRAL CIRCULATION WHICH PROBABLY BRINGS ON A STATE OF CHRONIC HYPOXIA. A COMBINATION OF THESE FACTORS LEADS TO A DECREASE ON THE LEVEL OF EXCITATIVE AND A DEVELOPMENT OF INHIBITIVE STATES OF DIFFERENT DEPTH OF THE HEMISPHERES. THIS MAY BE THE BASIS OF STABLE CHANGES OF CONSCIOUSNESS AND THE APPEARANCE OF THE AMNESTICAL SYNDROME. FACILITY: N-I INSTITUT NEYROKHIRURGII IM. N. N. BURDENKO AMN SSSR, MOSCOW.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--WATER DILUTED THERMOSETTING COPOLYMERS -U-

AUTHOR-(02)-ABRAMYAN, R.K., FILIPPYCHEV, G.F.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1), 12-14

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--THERMOSETTING MATERIAL, OLIGOMER, FORMALDEHYDE, AMMONIA, AMINE, PLASTIC FILM, IMPACT STRENGTH, AD ESION, MALEIC ACID, COPOLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0429 STEP NO--UR/0303/70/000/001/0012/0014

CIRC ACCESSION NO--AP0119365
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 027

CIRC ACCESSION NO--AP0119365

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMNS. OF MALEAMIC ACID WITH CH SUB2:CHCO SUB2 ET (I), OR STYRENE IN 50PERCENT ISO-PROH SOLN., OR MALEIC ANHYDRIDE (II) WITH I OR H SUB2 C: CHCO SUB2 ME (III) IN 50PERCENT MECH SOLN., CONTG. TERT-DODECYL MERCAPTAN AS THE CHAIN GROWTH REGULATOR AND CYCLOHEXANONE PEROXIDE AS THE INITIATOR, GAVE OLIGOMERS WHICH, WITHOUT ISOLATION, WERE TREATED WITH HCHO (MALEAMIC ACID COPOLYMERS) AND NH SUB3 OR H SUB2 NCH SUB2 CH SUB2 OH, RESP., FOR THE LATTER 2 COPOLYMERS. THE OBTAINED CROSSLINKED POLYMERS WERE SOL. IN WATER AT PH 8.5 AND GAVE FILMS UPON EVAPN. OF THE WATER AND HEATING THE RESIDUES AT 160DEGREES FOR 0.5 HR. THE BEST FILMS WERE OBTAINED FROM 8-II AND II-III COPOLYMERS; THEY CONTAINED LESS THAN OR EQUAL TO 95PERCENT 3,DIMENSIONAL STRUCTUR, HAD 40-45 KG-CM IMPACT STRENGTH, GOOD ADHESION TO METAL OR GLASS, AND RESISTED SALT SOLNS.

UNCLASSIFIED

USSR

UDC 620.17:669.14.018.298

DOGADAYEVA, V. A., GULYAYEV, A. P., ZIKEYEV, V. N., and FILIPPYCHEVA, M. M., Central Scientific Research Institute of Ferrous Metallurgy

"The Properties of 18Kh2N4VA Steel Made by Various Methods"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 2-5

Abstract: This work presents a study of the properties of 18Kh2N4VA steel, melted in an open induction furnace with magnesite lining and after vacuum arc and cathode ray remelting. The vacuum arc remelting was performed on metal made by the open inducation method, while cathode ray remelting was performed on metal produced in a vacuum induction furnace. The steel produced by vacuum induction melting with subsequent cathode ray remelting had reduced contents of oxygen and nitrogen, sulfur, tin, arsenic, antimony, and nonmetallic inclusions. The vacuum-arc remelted steel contained lower contents of oxide and sulphide nonmetallic inclusions than ordinary steel. The pure steels have a higher tendency toward grain growth, increasing with higher temperatures. The impact toughness of the vacuum induction + cathode ray remelted steel is approximately 2-3 times higher, although the

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810018-9"

USSR

DOGADAYEVA, V. A., et al, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 2-5

cold brittleness threshold is the same for both types of steel. The increase in impact toughness upon remelting results from an increase in the work of crack development.

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USSR

UDC 669.14.018.29:669.187

VINOGRAD, M. I., KISELEVA, S. A., [illegible], and LAVRENOVA, I. A., TsNIICHM, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Non-Metallic Inclusions in ShKh15 Steel Remelted by Different Methods"

Moscow, Stal', No 10, Oct 70, pp 935-938

Translation: A comparative investigation was made of impurities in open electric melted ShKh15 steel and in three refining remelts: electric slag remelting production, most advanced process, data from 1962 and later, vacuum arc remelt, and electron-arc remelt (experimental melting). Non-metallic inclusions of various types were used. The inclusions were estimated according to four methods: the GOST 801-60 scale, the ChMTU/TsNIICHM 238-60 scale, determination of the dirty fields of vision (volumetric content, TsNIICHM method), and using a quantitative television microscope with a magnification of 1275. The first two methods of estimating the remelted metal, which pertain to the insignificant quantities of small inclusions, are not demonstrative. Only reliable improvement in the quality of metal was noted in all types of remelting and no remelting method was demonstrably better than the other. Double remelting (electric slag and vacuum arc remelting, electric slag and electron-arc remelting) resulted in the highest purity.

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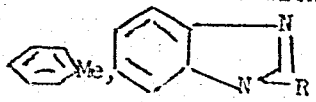
USSR

UDC 547.781.5.785.5

FILIPSKIKH, T. P., POZHARSKIY, A. F., KOROLEVA, V. N., SIMONOV, A. M., and ZVEZDINA, E. A., Rostov State University, Rostov-on-Don

"Derivatives of Imidazole Containing Potentially Labile Groups at the N_1 Atom. VI. Some 2-Amino Derivatives of 1-Aralkyl- and 1-Methoxymethylbenzimidazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 809-811

Abstract: By reacting benzimidazole with substituted benzyl chlorides and the Ag salt of benzimidazole with benzhydrylchloride, 1-aralkylbenzimidazoles (I) were obtained, in which R =  = $-CH_2$ $-CH_2$  $CHMe_2$, $-CH_2$  $-CHPh_2$. By the action of $NaNH_2$ on compounds I, an amino group was introduced in position 2 of the benzimidazole nucleus. In this manner, the 1-aralkyl-2-aminobenzimidazoles (II) derived from I were synthesized. By reacting the Na salt of 2-aminobenzimidazole with methoxymethyl chloride, 1-methoxymethyl-2-aminobenzimidazole (III) was prepared. Compounds II-III were required for the generation of highly reactive 2-aminobenzimidazole anions by the reductive cleavage of the N-R bond with Na in liquid NH_3.

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1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SYNTHESIS AND DETERMINATION OF THE LATTICE PARAMETERS OF NEW OXIDES OF COMPLEX COMPOSITION WITH PEROVSKITE STRUCTURE -U-

AUTHOR-(05)-FILIPYEV, V.S., FESENKO, YE.G., DEVLIKANOVA, R.U., ZHAVORONKO, G.P., SHVOM, YE.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 179-81

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MINERAL, OXIDE, CRYSTAL LATTICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0148 STEP NO--UR/0363/70/006/001/0179/0181

CIRC ACCESSION NO--AP0054944

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE COMPDS. CA SUB3 TA SUB2 CDO SUB9 AND CA SUB3 TA SUB2 CAO SUB9 (CA SUB4 TA SUB2 O SUB9), A NEW TYPE OF PEROVSKITE LATTICE DISTORTION WAS OBSD. IN CONTRAST TO THE KNOWN TRICLINIC DISTORTION, THE PEROVSKITE LATTICE OF THESE COMPDS. IS OBTAINED FROM A SUPPLEMENTARY MONOCLINIC DISPLACEMENT ALONG THE LONG DIAGONAL OF THE BASE.

UNCLASSIFIED

USSR

UDC: 621.3.049.75

SERCHUGOVA, A. G., OSHARIN, V. I., FILIP'YEVA, N. I., ORLOVA, L. N.

"A Method of Making Printed-Circuit Boards"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293312, Division H, filed 31 Mar 69, published 15 Jan 71, p 182

Translation: This Author's Certificate introduces a method of making printed-circuit boards with metallized holes by a positive combined method. As a distinguishing feature of the patent, the quality and reliability of the boards is improved and cost is reduced by electrophoresis polymer coating of the printed-circuit drawing formed by chemical and galvanic copper plating. This polymer coating is stripped off after removal of the photoresist and etching of the copper foil.

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USSR
Adsorption

USSR

BELITSKIY, I. A., SHCHERBATYUK, N. YE., KRASNOVA, L. V., FILIZOVA, L. D., TYURINA, YE. F.

"Sorption Properties of Cation-Substituted Forms of Clinoptilolite"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSR -- Seriya Khimicheskikh Nauk, No 1, 1973, pp 84-87

Abstract: This paper is a continuation of the study of the sorption and molecular-screen properties of high-silicon heulandite-clinoptilolite, the natural forms of which were investigated previously [I. A. Belitskiy, et al., Izv. Sib. Otd. AN SSSR, ser. khim. nauk, No 14, vyp. 6, 1971]. Just as before, monomineral (~99%) clinoptilolite from Bulgaria was used in the study:

$$(Ca_{1.26}Mg_{0.29}K_{1.58}Na_{1.34})\cdot[Al_{6.05}Si_{30.00}O_{72}]\cdot 16.59\ H_2O.$$

The study was made of the sorption properties of the clinoptilolite with respect to water vapor and methanol and six samples of cation-sensitive forms obtained by ion exchange based on clinoptilolite with lithium, sodium, potassium, rubidium, cesium and thallium ions as the "consolidated" cations.

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USSR

BELITSKIY, I. A., ET AL., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSR -- Seriya Khimicheskikh Nauk, No 1, 1973, pp 84-87

A reduction in the sorptive power was discovered going from the lithium cation form to the cesium cation form. This is connected with the reduction and degree of hydration of the cations increasing in size and also with a decrease in the free volume of the cavities.

The parameters of the microporous structure of the indicated sorbents were calculated on the basis of the Dubinin-Radushkevich theory of volumtric filling of the micropores. The lithium, sodium and potassium forms of clinoptilolite are characterized by the greatest sorption volume equal to 0.22-0.110.

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UDC 678.643.01:53

USSR

LI, P. Z., STAROSTIN, V. N., FILIPPENKO, D. M., TARASOV, YE. V., and GORBUNOV, V. N.

"Glass-Textolite Based on Compositions Containing 4-Vinyl-1,2-epoxycyclohexane"

Moscow, Plasticheskiye Massy, No 10, 1970, pp 14-15

Abstract: In an attempt to develop materials capable of prolonged exposure to high temperatures, compositions containing 4-vinyl-1,2-epoxycyclohexane (VECH), dioxide of the dicyclopentadiene (DODCP), ED-5 resin and maleic anhydride (MA) were studied. The materials were subjected to a short and long term exposure to high temperatures. Data on thermomechanical properties, weight loss on heating, dielectric permeability and maximum strength on static bending are reported graphically. On the basis of experimental results materials composed of 12.1 VECH + 48.3 DODCP + 39.6 MA or 9.3 VECH + 23.2 DODCP + 23.2 ED-5 + 43.3 MA can be used for prolonged periods at 250°C temperature, while the composition consisting of 16.2 VECH + 48.9 ED-5 + 34.9 MA can be used at 200°C for extended periods.

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1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PADE APPROXIMATION FOR S WAVE PI PI INTERACTION IN STATES WITH I EQUALS 0 AND I EQUALS 2 -U-

AUTHOR--FILKOV, L.V.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 457-60

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PION PION INTERACTION, ITERATION, SCATTERING AMPLITUDE, APPROXIMATION METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0371 STEP NO--UR/0367/70/011/002/0457/0460

CIRC ACCESSION NO--AP0111564

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111564

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE (11) PADE APPROXN. IS CONSTRUCTED FOR THE AMPLITUDES OF PI PI SCATTERING BASED ON ITERACTION OF DISPERSION RELATIONS OVER THE SUBTRACTION CONST. LAMBDA. THE S WAVE PI PI INTERACTION IN THE STATES WITH I EQUALS 0 AND I EQUALS 2 IS ANALYZED AT SMALL ENERGIES AND IN THE SUBTHRESHOLD REGION.

FACILITY: FIZ. INST. IM. LEBEDEVA, MSOCOW, USSR.

UNCLASSIFIED

USSR UDC: 621.319.4(088.8)

FILLIPOV, A. L., MOROZOV, Ye. D., ZAKHAREVICH, Yu. I., PLOTNIKOV, Yu. P.

"A Device for Preaging, Testing Electric Strength, and Sorting the Sections of Metallized Paper Capacitors With Respect to Insulation Resistance"

USSR Author's Certificate No 263005, filed 29 Jul 68, published 8 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V383 P)

Translation: A device is proposed for preaging, testing electric strength and sorting metallized paper capacitors with respect to insulation resistance. The device contains a disc conveyer, preaging module, insulation resistance measuring module, unit for sorting sections by insulation resistance, a module for testing the electric strength of the sections, which is equipped with control lamellas supporting current take-off rollers in voltage regulators, and a drive mechanism. As a distinguishing feature of the device, design of the installation is simplified and the operational reliability of the device is improved by kinematically connecting the current take-off rollers to the conveyer, placing a lamella for holding the sections under voltage between and partially overlapping the contact lamellas, and equipping the unit for sorting the sections with an extractor

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FILLIPOV, A. L. et al., USSR Author's Certificate No 263005

whose lever is loosely fit on a vertical shaft. The latter is connected to a spring-loaded rocker resting on a cam of the drive mechanism.

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USSR

FEDOROV, F. I. FILLIPOV, V. V.

"Trajectories and Flux Lines of Inhomogeneous Wave Energy in an Isotropic Transparent Medium"

Leningrad, Optika i Spektroskopiya; September, 1972; pp 530-6

ABSTRACT: The trajectories and flux lines of the energy of inhomogeneous waves of arbitrary polarization in an isotropic transparent medium are found. In the general case the energy shift rate u and phase velocity v of such a wave are different; this condition leads to a distortion of the trajectories of the energy motion. The trajectories can be of two types, depending on whether the projection of the vector u in the v direction is larger or smaller than the phase velocity. The beam velocity of an inhomogeneous wave is always less than or equal to the beam velocity of a homogeneous wave in the same medium. Special cases of the polarization of an inhomogeneous wave, as well as the energy motion of an inhomogeneous wave with complete internal reflection, are considered.

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1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--KINETICS OF THE CRYSTALLIZATION OF LITHIUM DISILICATE FROM SIMPLE AND COMPLEX GLASSES -U-

AUTHOR-(02)-FILLIPOVICH, V.N., KALININA, A.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 351-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LITHIUM SILICATE GLASS, GLASS CRYSTALLIZATION, METAL OXIDE, NUCLEATION, SPHERULITE, REACTION KINETICS, LITHIUM COMPOUND, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0503 STEP NO--UR/0363/70/006/002/0351/0356

CIRC ACCESSION NO--AP0107108

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0107108

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF LOW TEMP. HEAT TREATMENT AND OF CHEM. COMPN. ON CRYSTN. KINETICS OF LI DISILICATE FROM GLASSES OF THE COMPN. 26LI SUB2 O.X(MGO, CAO).(1-X)SIO SUB2 (WHERE O IS SMALLER THAN OR EQUAL TO X IS SMALLER THAN OR EQUAL TO 10 MOLE PERCENT) AT VARIOUS RATIOS OF THE ALKALI EARTH METAL OXIDES WAS STUDIED. RESULTS OF THIS WORK SHOW THAT THE EFFECT OF PRECRYSTN. HEAT TREATMENT IN THE INVESTIGATED GLASSES CONSISTS IN THE FOLLOWING: SLIGHTLY NOTICEABLE CRYSTALLITES NUCLEATE AND SLOWLY GROW DURING THE PROCESS AT 450DEGREES; THESE THEN AT 600DEGREES GROW RAPIDLY, AND NEW CRYSTALLITES FOR ALL PRACTICAL PURPOSES DO NOT NUCLEATE. AN INCUBATION PERIOD FOR THE NUCLEATION OF THE CRYSTALS IS OBSERVED IN ACCORDANCE WITH THE CLASSICAL THEORY FOR THE NUCLEATION OF A NEW PHASE. THE PRECRYSTN. HEAT TREATMENT HAS PRACTICALLY NO EFFECT ON THE GROWTH RATE OF THE SPHERULITES. COMPLICATING THE CHEM. COMPN. OF THE GLASS RESULTS IN A SIGNIFICANT CHANGE IN THE GROWTH RATE AND IN A SHARP DECREASE IN THE NUCLEATION RATE OF THE SPHERULITES. THE GROWTH RATE OF THE SPHERULITES IS APPROX. EQUAL IN GLASSES WITH EQUAL LI SUB2 O CONTENT. THE CAPABILITY OF THE INVESTIGATED GLASSES TO METASTABLE SEGREGATION HAS NO SIGNIFICANT EFFECT ON THE NUCLEATION RATE OF THE SPHERULITES.

UNCLASSIFIED

USSR UDC 535.37 + 541.64

ANISIMOV, V. M., PILLIPS, D., KARPUKHIN, O. N., and SHLYAPINTOKH, V. YA., Institute of Chemical Physics, Academy of Sciences, USSR

"Chemiluminescence and Energy Transfer in Polymers"

Moscow, Izvestiya Akademii Nauk, Seriya Khimicheskaya, No 7, Jul 70, pp 1529-1535

Abstract: A study is reported on the quantitative investigation of chemical and physical mechanism of luminescence, the processes responsible for this phenomenon, on the identification of the emitter, etc. This phenomenon was studied on the example of decomposition of dicyclohexylperoxydicarbonate (DPD) in poly-2,2-propane-bis-4-phenylcarbonate, polystyrene and polymethylmetacrylate. Chemiluminescence is the result of the formation of triplet excited cyclohexane molecules during the recombination of radicals forming in thermal decomposition of DPD. The radii of energy transfer from the excited cyclohexanone molecule to the molecules of anthracene, dibromoanthracene, rhodamine 6Zh, and benzyl in polystyrene and polycarbonate were determined. They differed from the values obtained on the basis of Forster theory. This may be due to unevenly distributed impurities in the polymer, or to the differences in mechanism of the transfer processes studied.
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USSR UDC: None

FILONCHIK, A. V., MEDVEDKOV, V. I., MAN'KO, V. V., and LAPTEV, I. I.

"Device for Solving Partial Differential Equations"

Moscow, Otkrytiya. izobreteniya. promyshlennyye obraztsy, tovarnyye znaki, No 29, 1973, Author's certificate 389521, p 179

Abstract: This device contains a grid model and a control unit. The inputs to the latter are connected to a program unit, while its outputs are joined to an output switch and a unit for specifying the boundary conditions of the grid model. Its distinctive feature is an auxiliary grid model which shortens the time for solution of the partial differential equation and has the effect of simplifying the structure of the device. The interconnections of this auxiliary grid model with the other units are given.

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USSR UDC 547.298.3

PINCHUK, A. M., SULEYMANOVA, M. G., and FILONENKO, L. P., Institute of Organic Chemistry, Academy of Sciences UkrSSR

"Reaction of N-Chlorohexamethyldisilazane With Trivalent Phosphorus Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 2115-2116

Abstract: N-chlorohexamethyldisilazane reacts with triaryl- and trialkylphosphines, trialkyl phosphites and chlorodialkylphosphites at 0-10° in ether, forming trimethylchlorosilanes and phosphazotrimethylsilanes. Following compounds have been synthesized: triphenylphosphazotrimethylsilane, m.p. 74-76°; tributylphosphazotrimethylsilane, b.p. 90-92°/0.04 mm n_D^{25} 1.4665; triethoxyphosphazotrimethylsilane, b.p. 86-87°/15 mm, n_D^{25} 1.4180; tripropoxyphosphazotrimethylsilane, b.p. 62-63°/0.05 mm, n_D^{25} 1.4210; tributoxyphosphazotrimethylsilane, b.p. 77-78°/1 mm, n_D^{25} 1.4285; diethoxychlorophosphazotrimethylsilane, b. p. 83-85°/25 mm, n_D^{25} 1.4275.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THE EFFECT OF GRINDING CONDITIONS UPON THE TEMPERATURE IN THE CUTTING ZONE -U-

AUTHOR-(03)-FILOMENKO, S.N., ANELCHIK, D.YE., LISOVOY, G.Z.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 39-40

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--GRINDING MACHINE, METAL CUTTING, TEMPERATURE MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0887 STEP NO--UR/0121/70/000/003/0039/0040

CIRC ACCESSION NO--AP0113731

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113731

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMPERATURE ORIGINATING IN THE CUTTING ZONE IS A MOST IMPORTANT PARAMETER IN GRINDING, BUT ITS DIRECT DETERMINATION BY A THERMAL TRANSDUCER IS DIFFICULT DUE TO THE FACT THAT ITS TIME CONSTANT CONSIDERABLY EXCEEDS THE CONTACT TIME. THEREFORE THE INSTANTANEOUS CONTACT TEMPERATURE HAS BEEN CALCULATED BY MEANS OF A DYNAMIC METHOD, BASED UPON THE FACT THAT WITH UNKNOWN CONSTANT CONDITIONS OF HEAT EXCHANGE, THE TEMPERATURE OF A MEDIUM MAY BE DETERMINED ON THE BASIS OF THE READINGS OF A THERMOCOUPLE. A FORMULA HAS BEEN DEVELOPED WHEREBY IT IS POSSIBLE TO DETERMINE THE TRUE CONTACT TEMPERATURE ON THE BASIS OF THE VALUE OF THE RECORDED INCREMENT OF THERMOELECTROMOTIVE FORCE CORRESPONDING TO THE TIME OF CONTACT OF THE GRINDING DISK WITH THE PART. THE INSTANTANEOUS CONTACT TEMPERATURE DURING EXTERNAL CIRCULAR GRINDING WAS OBTAINED BY MEANS OF AN ATTACHEMENT MOUNTED ON THE GRINDING MACHINE. THE ERROR OF COMPUTING THE INSTANTANEOUS CONTACT TEMPERATURE ON THE BASIS OF THE ABOVE MENTIONED FORMULA DOES NOT EXCEED 8PERCENT.

USSR

ZASLAVSKIY, G. M.; FILONENKO, N. N. (Institute of Physics, Siberian Department of the USSR Academy of Sciences)

"Statistical Properties of the Energy Spectrum of 'Grazing' Electrons with Intermingling Classical Trajectories"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; August, 1973; pp 643-56

ABSTRACT: An investigation is made of the statistical properties of the distribution of distances between energy levels in a quasi-classical approximation for a finite system with intermingling classical trajectories in phase space. The model is that of electrons "drifting" in a magnetic field along a periodically goffered surface which is convex at all points in the region of motion of the electrons. Quantization conditions in the quasi-classical approximation are determined. The probability of a given distance ΔE between the levels is evaluated. A Gaussian distribution is obtained for large values of ΔE; for small values of ΔE the probability is basically proportional to the power of ΔE. The exponent depends on the properties of intermingling of the trajectories.

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FILONENKO, V. A.

eutectics

JPRS 55452

16 March 1972

UDC 669.017.12

CLASSIFICATION OF BINARY EUTECTICS

[Article by V. A. Filonenko: Moscow, Izvestiya Akademii Nauk SSSR, Metally, Russian, No 6, 1971, submitted 10 July 1970, pp 154-160].

The fact that a single eutectic following hardening under various cooling conditions may have various types of structures was revealed, studied and given a scientific foundation in [1]. However, modern classifications of eutectics do not take this phenomenon into consideration sufficiently, and differ little from the formal classifications of the thirties [2-6]. There are two principles for classification of eutectics. The first principle is used to classify structures as functions of the cooling conditions. The criterion for the separation of various types of structures is either the external form of the grains [1], or the internal structure of colonies [7]. In the latter case, eutectic alloys are classified, not their structures. Classifications of the first type do not consider the differences between the structural potentials of various alloys. Classifications of the second type do not consider the influence of the cooling conditions on the structure of the alloy. In the present work a solid eutectic composition is looked upon as a result of solidification of a eutectic melt. From this point of view, the solid structures may be 2-phase compositions or 1-phase solid solutions, metastable intermetallides or amorphous formations. By cooling a melt at different rates and then studying the compositions produced beneath the microscope, it is possible to observe various structural effects. They can all be reduced to a single system, if we normalize the cooling conditions of the alloys and consider the natural parameters of the components forming the eutectic. This was the essence of the program of work, the purpose of which was to systematize the solid structures depending on the heating and cooling conditions of the eutectic alloys, preliminarily divided into groups on the basis of their natural parameters.

The experimental method and materials used were described in [8]. The classification of the alloys uses as its basis for differentiation the set of parameters, including the structural characteristics of liquid, solid and boundary states of alloys. The structure of the liquid is evaluated

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UDC: 669.017.12

FILONENKO, V. A., (Moscow)

"Classification of Binary Eutectics"

Moscow, Izvestiya Akademii nauk SSSR, Metally, no 6, Nov-Dec 71, pp 154-160

Abstract: Use was made of microscopic, thermal, and x-ray diffraction analyses to study the structures of eutectic alloys (Sn-Pb, Sn-Cd, Sb-Ge, Sb-Pb, Ge-Ag, Si-Au) solidified under different cooling conditions. Based on the analysis of the thermodynamic data on phases, alloy solidification parameters, and structural characteristics of the specimens, the alloys are classified into three groups according to their structural features in the liquid state with allowance for a degree of thermodynamic correspondence during solidification. The classification of the structures of hard (metal) alloys was based on the conditions of heating and cooling of the specimens. It is shown that eutectic melts of the first group may crystallize in the form of two-phase compositions of different degrees of regularity as well as metastable solid solutions. The melts of the third group are characteristic by the formation of metastable intermetallides and amorphous phases.

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USSR

FILONENKO, V. A., Izvestiya Akademii nauk SSSR, Metally, no 6, Nov-Dec 71, pp 154-160

It has been demonstrated that regular compositions with an irregular eutectic base may be obtained by the method of oriented crystallization of eutectics. (7 illustrations, 5 tables, 22 bibliographic references).

2/2

1/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--AMPLIFICATION OF MICROWAVE OSCILLATIONS IN AN ARC DISCHARGE WITH A HOT CATHODE -U-

AUTHOR-(02)-LEVITSKIY, S.M., FILONENKO, YE.G.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH.; 15: 269-73, FEB 1970

DATE PUBLISHED----FEB 70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--MICROWAVE, OSCILLATION, ARC DISCHARGE, CATHODE, FREQUENCY CHARACTERISTIC, PLASMA WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0224 STEP NO--UR/0185/70/015/000/0269/0273

CIRC ACCESSION NO--AP0127835

UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127835

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMPLIFICATION OF THE MICROWAVE OSCILLATIONS WAS STUDIED IN AN ARC DISCHARGE WITH A HOT CATHODE. IT WAS FOUND THAT THE REAL AMPLIFICATION WAS 20 TO 25 DB. THE FREQUENCY CHARACTERISTIC OF THE AMPLIFICATION CONSISTS OF SOME DISCRETE BANDS WITH A WIDTH OF ABOUT 10 MHZ IN THE RANGE FROM 50 TO 200 MHZ. A LINEAR DEPENDENCE WAS OBSERVED BETWEEN THE OUTPUT AND INPUT POWERS, BUT WHEN THE INPUT POWER HAS A LARGE VALUE, NONLINEAR EFFECTS COUNTED. ON THE BASIS OF MEASURING DISPERSION CHARACTERISTICS OF THE PLASMA WAVES, IT IS CONCLUDED THAT GENERATION AND AMPLIFICATION ARE STIMULATED BY A SYNCHRONOUS INTERACTION OF THE PLASMA WAVES WITH THE ELECTRON STREAM ACCELERATED IN THE RANGE OF THE POTENTIAL CATHODE DROP.

FACILITY: KIEV STATE UNIV.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810018-9"

UDC 620.111.3

USSR

LIPNIK, V. G., and FILONIDOV, A. M.

"Study of Detectability of Defects in Concrete by Ultrasonic Methods"

Moscow, Defektoskopiya, No 5, 1970, pp 3-9

Abstract: The propagation conditions of an ultrasonic pulse in the vicinity of an internal defect in concrete are studied. An equation is presented for the propagation of elastic waves in an absorbing medium and it is demonstrated that the relationship between the characteristics of an ultrasonic pulse transmitted through concrete near an internal cavity defect is expressed by a simple mathematical dependence. Results are presented from experimental studies of the sensitivity of ultrasonic defectoscopy by sound penetration of standard concrete specimens. Relationships are calculated between the diameter of a defect, length of traveling wave and pulse characteristics, and a nomogram is constructed for determination of the dimensions of defects in concrete. A numerical example of estimation of the dimensions of a defect in the form of a cavity on the basis of ultrasonic test data is presented.

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1/3 018 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ON THE RELATIONSHIP BETWEEN THE SPEED OF PROPAGATION OF ULTRASOUND AND THE PATH LENGTH IN MASSIVE CONCRETE -U-
AUTHOR--FILONIDOV, A.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GIDROTEKHNICHESKOYE STROITEL'STVO, NO. 2, PUBLISHED BY THE MINISTRY OF POWER AND ELECTRIFICATION OF THE USSR AND THE
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SOUND PROPAGATION, CONCRETE, SPECTRUM, ULTRASONIC TEST APPARATUS, ACOUSTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0741 STEP NO--UR/0098/70/000/002/0032/0036

CIRC ACCESSION NO--AP0105689
UNCLASSIFIED

2/3 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105689

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR HAS DEVELOPED A TECHNIQUE FOR CONSIDERING CHANGES IN THE AMPLITUDE PHASE SPECTRA OF ULTRASONIC IMPULSES AS A FUNCTION OF PATH LENGTH IN CONCRETE. THESE CHANGES OCCUR IN A REGULAR FASHION AND ARE CONNECTED WITH THE NORMAL ABSORPTION PROPERTIES OF THE CONCRETE. IN TESTING THE QUALITY OF CONCRETE WITH ULTRASONICS, THESE CHANGES MUST BE DISTINGUISHED FROM THOSE WHICH INDICATE REDUCED QUALITY OR STRUCTURAL DEFECTS OF THE CONCRETE. THE QUANTITATIVE REDUCTION IN THE PROPAGATION SPEED OF ULTRASOUND ALONG A RAY IN THE DIRECTION OF EACH SOUND PROBE DEPENDS ON THE PHYSICAL, MECHANICAL PROPERTIES OF THE CONCRETE, ITS COMPOSITION AND AGE AND THE NATURAL FREQUENCY OF THE ULTRASONIC IMPULSE GENERATOR. FOR BASES OF MEASUREMENT FROM 1 TO 6 METERS IN LENGTH THEY RANGE FROM 1 TO 12PERCENT.

UNCLASSIFIED

3/3 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105689

ABSTRACT/EXTRACT--CORRECTION COEFFICIENTS FOR THIS FACTOR CAN BE DETERMINED FROM THE MEASURED ACOUSTIC CHARACTERISTICS OF CONCRETE. THE BASIC CONCEPT CHANGES IN THE NUCLEUS OF THE ULTRASONIC IMPULSE, WHERE THE NUCLEUS IS TAKEN TO BE A PACKET OF WAVES WHICH INCLUDE THE PREDOMINANT FREQUENCY OF THE IMPULSE W PLUS OR MINUS DELTA W SUB DELTA YIELDS 0, WHICH CONTAINS THE MAXIMUM AMPLITUDES IN THE AMPLITUDE FREQUENCY SPECTRUM OF THE IMPULSE. THE AUTHOR BEGINS BY EXPRESSING THE DISSIPATION OF THE ENERGY OF THE ULTRASONIC IMPULSE BY FORMULAS (SHOWN ON MICROFISH). THE RELATIONSHIP SHOWN IS APPARENTLY ALSO VALID FOR TESTING CONCRETE IN MASSIVE STRUCTURES BY THE SHOCK WAVE METHOD. THE EXPERIMENTS SHOWED AN ALMOST LINEAR RELATIONSHIP BETWEEN THE ABSORPTION OF LONGITUDINAL ULTRASONIC WAVES IN A CONCRETE MASS AND THEIR FREQUENCY. USING STANDARD ULTRASONIC EQUIPMENT, THE AUTHOR FOUND THAT THE GROUP VELOCITY OF THE IMPULSE NUCLEUS COULD BE DETERMINED BY RECORDING THE ARRIVAL OF THE LEADING FRONT OF THE IMPULSE, WHICH YIELDED A MEAN PHASE VELOCITY FROM 1 TO 4PERCENT LESS THAN THAT OF THE WAVE NUCLEUS. IN ORDER TO UTILIZE THIS TECHNIQUE, IT IS NECESSARY TO HAVE A STANDARD CUBE OR CYLINDER OF CONCRETE FOR CALIBRATION. THE AUTHOR PROVIDES A GRAPH TO DETERMINE COEFFICIENT DELTA, THE CORRECTION FACTOR TO RELATE PROPAGATION SPEED IN THE CALIBRATION FEED TO THAT IN THE CONCRETE BLOCK UNDER TESTS. DELTA IS A FUNCTION OF THE RATIO OF PERIODS OF THE TRAVELING WAVES T SUB0 AND T, FOR THE STANDARD AND TEST PIECES RESPECTIVELY, AND THE Q OF THE CONCRETE.

UNCLASSIFIED

USSR

UDC 624.078.012.35:620.179.16:621.311.21

FILONIDOV, A. M., Candidate of Technical Sciences

"On the Relationship Between the Speed of Propagation of Ultrasound and the Path Length in Massive Concrete"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No. 2, Published by the Ministry of Power and Electrification of the USSR and the Scientific-Technical Society of the Power and Electronic Industry, 1970, pp. 32-36

Abstract: The author has developed a technique for considering changes in the amplitude-phase spectra of ultrasonic impulses as a function of path length in concrete. These changes occur in a regular fashion and are connected with the normal absorption properties of the concrete. In testing the quality of concrete with ultrasonics, these changes must be distinguished from those which indicate reduced quality or structural defects of the concrete. The quantitative reduction in the propagation speed of ultrasound along a ray in the direction of each sound probe depends on the physical-mechanical properties of the concrete, its composition and age and the natural frequency of the ultrasonic impulse generator. For bases of measurement from 1 to 6 meters in length they range from 1 to 12%. Correction coefficients for this factor can be determined from the measured acoustic characteristics of concrete.

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FILONIDOV, A. M., Gidrotekhnicheskoye Stroitel'stvo, No 2, 1970, pp 32-36

The basic concept concerns changes in the nucleus of the ultrasonic impulse, where the nucleus is taken to be a packet of waves which include the predominant frequency of the impulse $\omega \pm \Delta\omega_{\Delta\to}0$, which contains the maximum amplitudes in the amplitude-frequency spectrum of the impulse.

The author begins by expressing the dissipation of the energy of the ultrasonic impulse by the following formula

$$U(l, t) = \int_{-\infty}^{\infty} \hat{U}(0,\omega) e^{i(K(\omega) l - \omega t)} d\omega, \qquad (1)$$

where $\hat{U}(0, \omega)$ is a Fourier transform of $U(l, \omega)$ in time for $l = 0$; l is distance; t is time; $K(\omega)$ is the wave number which characterizes the phase shift and amplitude change of the waves; ω is the cyclic frequency of the waves, equal to $2\pi f$ radians/sec; f is the frequency of the waves in kilohertz. $K(\omega)$ is in turn the sum of a phase coefficient $\phi(\omega)$ and an absorption coefficient $\alpha_{\text{м}}(\omega)$:

$$K(\omega) = \varphi(\omega) + i\alpha_{\text{м}}(\omega). \qquad (2)$$

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FILONIDOV, A. M., Gidrotekhnicheskoye Stroitel'stvo, No. 2, 1970, pp. 32-36

This in turn permits the expression of an index of refraction for concrete:

$$n(\omega) = \frac{K(\omega)}{K_0(\omega)} = \operatorname{Re} n(\omega) + i \operatorname{Im} n(\omega). \qquad (3)$$

where $K_0(\omega)$ is the nondispersive behavior of $K(\omega)$ at the same frequency; the index of refraction is broken down into real and imaginary parts. The group velocity of propagation for the waves in the impulse nucleus is then determined as a function of ω,

$$U_g(\omega) = \frac{l}{t} = \left[\frac{\partial \varphi(\omega)}{\partial \omega}\right]^{-1}, \qquad (4)$$

and expressed in terms of the index of refraction

$$u_g(\omega) = v\left\{\frac{\partial[\omega \operatorname{Re} n(\omega)]}{\partial \omega}\right\}^{-1}$$

$$\text{или } u_g(x) = v\left\{\frac{\partial[x \operatorname{Re} n(\omega)]}{\partial x}\right\}^{-1}. \qquad (5)$$

where v is the group velocity of waves in the impulse nucleus at frequencies of $\omega_0 \pm \Delta\omega_{0,\Delta\to 0}$; $x = \omega/\omega_0$.

Since the displacement of the impulse, the wave number and the index of refraction are analytical functions in the upper part of the complex frequency plane, the Cauchy integral for a point ω_1 on the boundary of the analytical region of shift growth $\Delta U(\omega)$ is expressed as

$$\Delta n(\omega_1) = \frac{1}{\pi i} P \int_{-\infty}^{\infty} \frac{\Delta n(\omega)}{\omega - \omega_1} d\omega, \qquad (6)$$

where P is the primary value of the integral. This is divided into real and imaginary parts,

$$\mathrm{Re}\,\Delta n(\omega_1) = \frac{1}{\pi} P \int_{-\infty}^{\infty} \frac{\mathrm{Im}\,\Delta n(\omega)}{\omega - \omega_1} d\omega; \qquad (7)$$

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FILONIDOV, A. M., Gidrotekhnicheskoye Stroitel'stvo, No. 2, 1970, pp. 32-36

showing that the existence of the absorption expressed by the imaginary part is a necessary and sufficient condition for the existence of the dispersion expressed by the real part.

Applying the principle of causality to the index of refraction, using a Laplace transform, symmetry and the substitution of variables, the dispersion ratio of frequency characteristics for the ultrasonic impulse is expressed in terms of the index of refraction for low frequencies:

$$\mathrm{Re}\,[n(x)-n(0)]=\frac{2x^2}{\pi}P\int_0^{\infty}\frac{\mathrm{Im}\,n(x_2)}{x_2(x_2^2-x^2)}\,dx_2. \qquad (8)$$

where $x_2 = \omega_2/\omega_0$; $n(0) = 1$.

Considered as a wave guide, a massive concrete has a quality factor Q_0, connected with the acoustic characteristics of the concrete by an equation of the form:

$$Q_0=\frac{x\omega_0}{2\alpha_0 v}. \qquad (9)$$

and it can be shown that

$$\operatorname{Im} n(x_s) = \frac{1}{2Q_s}.$$

By integrating the equation of dispersion (8) for three different forms of ultrasound absorption in concrete, then differentiating the expression for xRen(x) on x and substituting the results in equation (5), the author obtains four possible relationships among the group propagation velocities of the nucleus of an ultrasonic impulse in a concrete mass, of which the following was in best agreement with experimental data:

$$u_s(x) = v\left[1 - \frac{2\alpha_s}{\pi x \omega_s}(\ln x + 1)\right]^{-1}. \qquad (13)$$

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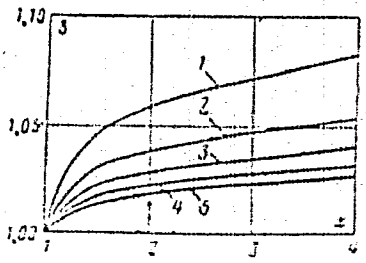
FILONIDOV, A. M., Gidrotekhnicheskoye Stroitel'stvo, No. 2, 1970, pp. 32-36

This relationship is apparently also valid for testing concrete in massive structures by the shock wave method.

The experiments showed an almost linear relationship between the absorption of longitudinal ultrasonic waves in a concrete mass and their frequency.

Using standard ultrasonic equipment, the author found that the group velocity of the impulse nucleus could be determined by recording the arrival of the leading front of the impulse, which yielded a mean phase velocity from 1 to 4% less than that of the wave nucleus. In order to utilize this technique, it is necessary to have a standard cube or cylinder of concrete for calibration. The author provides a graph to determine coefficient δ, the correction factor to relate propagation speed in the calibration feed to that in the concrete block under tests. δ is a function of the ratio of periods of the traveling waves T_0 and T, for the standard and test pieces respectively, and the Q of the concrete.



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USSR 681.2:621.317.42

BUZINOV, V.S., BELYAKOVA, G.M., MELEKHOV, M.YE., [redacted]

"Standard Units For Checking And Calibration Of Field-Strength Meters With Loop And Dipole Antennas"

Izmeritel'naya tekhnika, No 5, May 1972, pp 55-56

Abstract: This paper discusses P1-4 and P1-5 units of the second class which at present are entering production and are intended for metrological servicing of electromagnetic field-strength meters. The P1-4 operates in the 10 kHz-30 MHz frequency range. The range of the rated values of the magnetic field strength, reproducible by four interchangeable loops antennas, lies within the limits 0.5--0.025 mA/m. The P1-5, which operates in the 30--1000 MHz frequency range, uses a set of dipole antennas tuned to the fixed frequencies 30, 40, 50, 60, 70, 80, 100, 125, 150, 175, 200, 225, 250, 275, 300, 400, 500, 600, 700, 800 and 1000 MHz. The rated values of the electrical field strength, measurable by the dipoles of the standard unit, lie within the limits 0.7--10 v/m (according to the frequency). 2 fig. 2 ref. Received, 19 October 1971.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DIFFUSION OF NEODYMIUM AND IRON IN NEODYMIUM ORTHOFERRITE -U-

AUTHOR-(04)-PAVLYUCHENKO, M.M., FILONOV, B.O., SHIMANOVICH, I.YE., PROKUDINA, S.A.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(4), 328-31

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHYSICAL DIFFUSION, IRON, NEODYMIUM COMPOUND, THERMAL EFFECT, ISOTOPE, DIFFUSION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1399 STEP NO--UR/0250/70/014/004/0328/0331

CIRC ACCESSION NO--AT0128798

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0128798

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFUSION OF ND AND FE IN ND ORTHOFERRITE WAS INVESTIGATED BY USING ABSORPTION AND SECTIONING METHODS. EXPTS. WERE CARRIED OUT ON PRESSED NDFEO SUB3 SPECIMENS 10.5 MM IN DIAM. AND 3-5 MM HIGH; SUBSEQUENT MULTISTAGE SINTERING AT DIFFERENT TEMPS. WITH FINAL HOMOGENIZATION AT 1430DEGREES FOR 250 HR PRODUCED SPECIMENS WITH D. OF 6.10 G-CM PRIME3 CORRESPONDING TO 87PERCENT SPACE FILLING. DIFFUSION ANNEALING WAS CARRIED OUT IN ELEC. FURNACES AT 1240-1420DEGREES FOR 180 HR; THE TEMP. WAS REGULATED WITH AN ACCURACY OF PLUS OR MINUS 3DEGREES. DIFFUSION MOBILITY OF NDFEO SUB3 CATIONS WAS INVESTIGATED BY USING THE RADIOACTIVE ISOTOPES PRIME59 FE AND PRIME147 ND. THE TEMP. DEPENDENCES OF THE DIFFUSION COEFFS. ARE GIVEN. THE DIFFUSION COEFFS. OBTAINED BY THE ABSORPTION METHOD ARE HIGHER THAN THOSE OBTAINED BY THE SECTIONING METHOD, BECAUSE THE PENETRATION OF THE RADIOACTIVE ISOTOPES FOR THE FORMER TAKES PLACE IN THE BULK AND ALONG THE GRAIN BOUNDARIES, WHILE FOR THE LATTER IT OCCURS IN THE BULK OF THE MATERIAL ONLY. COMPARISON OF THE DIFFUSION COEFFS. INDICATES THAT CATION MOBILITY OF ND IN ND FERRITE IS HIGHER THAN THAT OF THE FE CATIONS. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

1/3 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--RELATIONSHIP BETWEEN MAGNETIC FIELD AND SPORADIC E LAYER -U-

AUTHOR-(03)-KOLESNIKOVA, T.V., STAROVATOV, A.A., FILONOVA, L.D.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 2, 1970, PP 358-359

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--E LAYER, GEOMAGNETIC FIELD, CORRELATION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0018 STEP NO--UR/0203/70/010/002/0358/0359

CIRC ACCESSION NO--AP0108408

UNCLASSIFIED

2/3 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0108408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MANY STUDIES HAVE BEEN MADE OF THE RELATIONSHIP BETWEEN THE EARTH'S MAGNETIC FIELD AND THE SPORADIC E LAYER. HOWEVER, THE RESULTS HAVE BEEN AMBIGUOUS. THIS STUDY WAS MADE ON THE BASIS OF DATA FOR 1964, 1965, AND 1966 FOR ALMA-ATA STATION. IT WAS POSSIBLE TO DETERMINE THE DEVIATIONS OF THE MEAN HOURLY F SUB0 E SUBS VALUES FROM THE MEAN MONTHLY VALUE AND THE DELTA F SUB0 E SUBS VARIATIONS WERE AVERAGED BY SEASONS. THE DELTA H (GAMMA) VALUES WERE ALSO DETERMINED FOR THE H-COMPONENT OF THE EARTH'S MAGNETIC FIELD. THE DIURNAL VARIATIONS DELTA H AND DELTA F SUB0 E SUBS WERE DETERMINED. IN SUMMER AND AT THE EQUINOX THE CHANGES OF THESE PARAMETERS ARE IN ANTIPHASE; IN WINTER THE CORRELATION IS POSITIVE. IN SUMMER AND AT THE EQUINOX, WHEN E SUBS OF TYPES C AND H IS MOST COMMONLY OBSERVED, THE CORRELATION BETWEEN F SUB0 E SUBS AND H IS NEGATIVE, BUT IN WINTER, WHEN TYPES L AND F PREVAIL, THE CORRELATION IS POSITIVE. SOMETIMES THE E SUBS SCREENING FREQUENCIES EXPERIENCE BRIEF BUT SIGNIFICANT CHANGES DURING THE DAY. DURING 1966 THERE WERE ABOUT 220 F SUBB E SUBS BURSTS. DURING SUMMER THESE BURSTS ARE USUALLY OBSERVED DURING THE DAYTIME AND FOR THE MOST PART BELONG TO E SUBS TYPE C. THEIR DURATION DOES NOT EXCEED AN HOUR. VALUES OF THE H-, Z- AND D- COMPONENTS WERE DETERMINED FROM THE MAGNETOGRAMS AT TIMES OF F SUBB E SUBS BURSTS AND DURING ADJACENT TIME PERIODS. IT WAS FOUND THAT F SUBB E SUBS BURSTS ARE USUALLY ACCOMPANIED BY MARKED H-, Z- AND D-COMPONENT CHANGES. AN INCREASE IN F SUBB E SUBS WAS ACCOMPANIED WITH EQUAL PROBABILITY BY AN INCREASE OR DECREASE IN THE H- COMPONENT.

UNCLASSIFIED

3/3 015 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0108408
ABSTRACT/EXTRACT--IN ONLY 39PERCENT OF THE CONSIDERED CASES DID MAGNETIC FIELD CHANGES TRANSPIRE SYNCHRONOUSLY WITH F SUBB E SUBS FOR THE H-COMPONENT, IN 43PERCENT OF THE CASES FOR THE Z-COMPONENT AND IN 27PERCENT OF THE CASES FOR THE D-COMPONENT. CHANGES IN ELEMENTS OF THE EARTH'S MAGNETIC FIELD EITHER LAG SOMEWHAT OR SOMEWHAT OUTSTRIP THE F SUBB E SUBS CHANGES, THE TIME DIFFERENCE BEING ABOUT 15 MINUTES. THE E SUBS LAYER TYPE C CAN BE ACCOMPANIED BY THE APPEARANCE OF A LOCAL CURRENT SYSTEM WHOSE MAGNETIC FIELD IS EITHER COMBINED WITH THE CURRENT SYSTEM IN THE NORMAL E REGION OR IS SUBTRACTED FROM IT. ACCORDINGLY, THERE CAN BE AN INCREASE OR DECREASE IN THE H- AND Z-COMPONENTS. VARIATIONS OF THE D-VECTOR BECOME UNDERSTANDABLE IF IT IS POSTULATED WITH THE MAGNETIC FIELD OF THE REGIONAL CURRENT SYSTEM MAY NOT COINCIDE WITH THE DIRECTION OF THE MAGNETIC FIELD VECTOR OF CURRENTS FLOWING IN THE E REGION.

UNCLASSIFIED

1/3 062 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF OPTOKINETIC AND VESTIBULAR EXPOSURES ON RELIABILITY OF A MAN OPERATOR IN SPACECRAFT CONTROL SYSTEMS, EFFECT OF OPTOKINETIC AND
AUTHOR-(03)-KIRILENKO, YU.I., FILOSOFOV, V.K., FOMIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO. 3, 1970, PP 476-478
DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, BIOLOGICAL AND MEDICAL SCIENCES, SPACE TECHNOLOGY
TOPIC TAGS--RELIABILITY, SPACECRAFT CONTROL, MAN, VESTIBULAR ANALYZER, VISION, OPTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0489 STEP NO--UR/0293/70/008/003/0476/0478

CIRC ACCESSION NO--AP0132702
UNCLASSIFIED

2/3 062 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0132702
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LABORATORY STUDY WAS MADE TO DETERMINE THE CHARACTERISTICS OF RELIABILITY OF A MAN OPERATOR FOR INVESTIGATING THE DEGREE OF DECREASE IN THE PERFORMANCE OF AN OPERATOR INCLUDED IN A CONTROL SYSTEM DURING PROLONGED THRESHOLD AND SUPERTHRESHOLD STIMULI OF THE VESTIBULAR AND VISUAL ANALYZERS. AS THE ADEQUATE STIMULUS THE AUTHORS SELECTED AN ANGULAR ACCELERATION CREATED ON A SPECIAL ROTATING SEAT WITH HYDRAULIC DRIVE AND A PROGRAMMED CONTROL DEVICE. THERE WAS A CONSTANT ANGULAR ACCELERATION OF 240EGREES-SEC PRIME2; ROTATION OF THE SEAT WAS TO THE RIGHT AND LEFT TO ANGULAR VELOCITIES OF 360DEGREES-SEC. THIS PROGRAM FOR ROTATION OF THE SEAT ENSURED APPEARANCE OF POSITIVE AND NEGATIVE ACCELERATIONS. THE TIME FOR ONE CYCLE OF GAINING AND LOSING ROTATION VELOCITY WAS 37 SEC. THE AVERAGE TIME OF ONE SEAT ROTATION WAS 2 SEC. OPTOKINETIC STIMULI WERE CREATED BY LIGHT BANDS MOVING ON A SCREEN WITH A VELOCITY OF 160 BANDS-MIN AND SITUATED AT THE SUBJECT'S EYE LEVEL. THE SYSTEM FOR CONTROL OF CHAIR ROTATION MADE IT POSSIBLE TO CHANGE THE PROGRAM FOR MODIFYING THESE STIMULI IN THREE REGIMES: EXPOSURE ONLY TO A VESTIBULAR STIMULUS (CONTROL REGIME); COPHASED EFFECT OF VESTIBULAR AND OPTOKINETIC STIMULI (SUMMATION REGIME); ANTIPHASE EFFECT OF STIMULI (INTERFERENCE REGIME). THE SUBJECTS WERE MALES AGES 21-23. IT WAS ESTABLISHED THAT DURING PROLONGED OPTOKINETIC AND VESTIBULAR EXPOSURES, CLOSE TO THRESHOLD, THE DISTRIBUTION LAW FOR OPERATORS CONFORMS TO A TRUNCATED NORMAL LOW. THE RELIABILITY OF AN OPERATOR'S PERFORMANCE IN THE REGIME OF SUMMATION OF STIMULI IS CONSIDERABLE LOWER THAN IN A CONTROL REGIME AND IN AN INTERFERENCE REGIME.

UNCLASSIFIED

3/3 062 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0132702
ABSTRACT/EXTRACT--ACCORDINGLY, IF THE ALGEBRAIC SUM OF EXTERNAL STIMULI IS CHANGED, IT IS POSSIBLE TO INCREASE OR REDUCE THE RELIABILITY OF THE OPERATORS. THE EFFECT OF OPTOKINETIC AND VESTIBULAR FACTORS IS REFLECTED IN THE QUALITY OF SURVEILLANCE. FOR EXAMPLE, IN A SUMMATION REGIME, DESPITE INDIVIDUAL PECULIARITIES IN THE REACTION OF EACH OPERATOR TO EXPOSURE TO STIMULI, THE QUALITY OF SURVEILLANCE IS POORER THAN IN OTHER REGIMES. IT WAS POSSIBLE TO DETERMINE THE LAW OF DISTRIBUTION OF THE TIME OF RESTORATION OF OPERATOR WORK CAPACITY. THIS RESTORATION CONFORMS TO THE LAW SHOWN ON MICROFICHE. HERE T IS THE TIME CONSTANT OF RESTORATION OF OPERATOR PERFORMANCE. THE RESTORATION OF PERFORMANCE OF OPERATORS AFTER EXPOSURE TO STIMULI IN A SUMMATION REGIME TRANSPIRES CONSIDERABLE MORE SLOWLY THAN IN OTHER REGIMES. IT WAS ESTABLISHED IN EXPERIMENTS THAT THE RESTORATION TIME CONSTANTS HAVE THE FOLLOWING VALUES: SUMMATION REGIME, 1.25 SEC, CONTROL REGIME, 1.10 SEC, INTERFERENCE REGIME.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AMINOTRANSFERASES FROM SKELETAL MUSCLES OF LOWER VERTEBRATES -U-

AUTHOR--FILOSOFOVA, YE.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VOL 6, NR 2, PP 179-186

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINOTRANSFERASE, ENZYME ACTIVITY, MUSCLE TISSUE, FISH, LAMPREY, MITOCHONDRION, CYTOPLASM, ELECTROPHORESIS, CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0387 STEP NO--UR/0385/70/006/002/0179/0186

CIRC ACCESSION NO--AP0132616

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810018-9"

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES HAVE BEEN MADE ON THE ACTIVITY AND SOME FEATURES OF MOLECULAR STRUCTURE OF ASPARTATE AND ALANINE AMINOTRANSFERASES (ASASE; ALASE) FROM MUSCLE TISSUE OF LOWER VERTEBRATES. INTERSPECIFIC DIFFERENCES IN THE ACTIVITY LEVELS OF THE ENZYMES STUDIED WERE OBSERVED. THE HIGHEST ASASE ACTIVITY WAS DETECTED IN LAMPREY MUSCLES, DECREASING CONSIDERABLY IN LOWER FISHES; FURTHER INCREASE OF ASASE ACTIVITY IN COLD BLOODED VERTEBRATES NEVER REACHES THE LEVEL TYPICAL OF THE LAMPREY. NO REGULAR PATTERN WAS FOUND WITH RESPECT TO ALASE ACTIVITY. QUALITATIVE DIFFERENCES WERE ALSO OBSERVED. SIMILARLY TO MUSCLES OF WARM BLOODED ANIMALS, IN SKELETAL MUSCLES OF LOWER VERTEBRATES TWO ISOENZYMES OF ASASE AND ALASE WERE REVEALED; ONE OF THEM IS LOCALIZED IN MITOCHONDRIA, THE OTHER, IN CYTOPLASM. BOTH THE CONTENT AND THE SPECIFIC ACTIVITY OF MITOCHONDRIAL ASASE ISOENZYMES INCREASE IN EVOLUTION OF COLD BLOODED VERTEBRATES. TRANSAMINASE ISOENZYMES FROM VARIOUS SPECIES OF COLD BLOODED ANIMALS EXHIBIT DIFFERENT ELECTROPHORETIC MOBILITY AND DIFFERENT AFFINITY TO DEAE CELLULOSE. FACILITY: INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY, USSR ACADEMY OF SCIENCES, LENINGRAD.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--GENERAL SOLUTIONS OF THE EQUATIONS OF THE DISPLACEMENT THEORY OF SHALLOW SHELLS -U-

AUTHOR-(02)-GRIGOLYUK, E.I., FILSHTINSKIY, L.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA TVERDOGO TELA, MAR.-APR. 1970, P. 75-82.

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHELL THEORY, SHELL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0345 STEP NO--UR/0484/70/000/000/0075/0082

CIRC ACCESSION NO--AP0124102

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124102

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF GENERAL SOLUTIONS OF THE EQUATIONS OF THE ENGINEERING THEORY OF SHALLOW SHELLS UNDERGOING DISPLACEMENTS, CONTINUING THE WORK BEGUN BY VEKUA (1948). IT IS SHOWN THAT ANY REAL SOLUTION OF SUCH AN EQUATION CAN BE REPRESENTED IN TERMS OF FOUR ARBITRARY ANALYTICAL FUNCTIONS. THE PROBLEM OF CONSTRUCTING THE RIEMANN FUNCTION OF THE PRODUCT OF TWO DIFFERENTIAL OPERATORS WHEN THE GENERAL SOLUTION IS REPRESENTED IN THE FORM PROPOSED BY VEKUA (1948) IS GIVEN SPECIAL ATTENTION.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--A COMPLETE SYSTEM OF SOLUTIONS IN SHALLOW SHELL THEORY -U-

AUTHOR-(02)-GRIGOLYUK, E.I., FILSHTINSKIY, L.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 190, JAN. 21, 1970, P. 549-551

DATE PUBLISHED--21JAN70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHELL THEORY, SHELL STRUCTURE, CYLINDRIC SHELL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1102 STEP NO--UR/0020/70/190/000/0549/0551

CIRC ACCESSION NO--AT0116568

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0116568

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF A SYSTEM OF REGULAR SOLUTIONS WHICH IS COMPLETE WITH RESPECT TO ANY FINITE SIMPLY CONNECTED REGION ON THE SURFACE OF A SHELL. THE SYSTEM OF SOLUTIONS IS OBTAINED ON THE BASIS OF THE METHOD OF INTEGRAL REPRESENTATIONS. AS AN EXAMPLE, THE RESULTS ARE APPLIED TO A CIRCULAR CYLINDRICAL SHELL.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810018-9"

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INTEGRAL REPRESENTATIONS OF SOLUTIONS IN SHALLOW SHELL THEORY -U-

AUTHOR--FILSHTINSKIY, L.A.

F

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 190, FEB. 21, 1970, P. 1300-1302
DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHELL THEORY, SHELL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1103 STEP NO--UR/0020/70/190/000/1300/1302

CIRC ACCESSION NO--AT0116569
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 014

CIRC ACCESSION NO--AT0116569

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE SYSTEM OF EQUATIONS IN ENGINEERING SHALLOW SHELL THEORY, WRITTEN IN PARTIAL DIFFERENTIAL FORM. A GENERAL SOLUTION TO THESE EQUATIONS IS OBTAINED IN INTEGRAL REPRESENTATIONS, WHERE THE KERNELS ARE WRITTEN IN EXPLICIT FORM. THE REPRESENTATIONS OBTAINED YIELD ALL THE REGULAR SOLUTIONS OF THE PARTIAL DIFFERENTIAL SYSTEM OF EQUATIONS.

UNCLASSIFIED

UDC 621.3.011.1

USSR

FIL'TS, R. V., RATICH, O. D.

"Harmonic Linearization of Nonlinear Elements"

Novocherkassk, Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, No 1, 1972, pp 16-23

Abstract: Analytical expressions for the differential parameters of nonlinear elements characterizing their behavior in the presence of small harmonic variations in the operating conditions are derived under the assumptions corresponding to the conditions of harmonic linearization of nonlinear elements operating under the conditions of symmetric periodic oscillations. The application of the proposed parameters is illustrated in two examples -- calculation of the volt-ampere characteristics of the periodic conditions of nonlinear circuits and determination of the aperiodic instability of their steady-state conditions.

The approximation of the characteristics of the nonlinear elements by the method of harmonic linearization communicates the basic properties characterizing the behavior of the nonlinear elements for small harmonic variations of their operating conditions. These properties are described mathematically by differential parameters of the harmonic regime defined by the proposed analytical expressions. In calculating the characteristics of nonlinear

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USSR

FIL'TS, R. V., et al., Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, No 1, 1972, pp 16-23

circuits operating in the periodic regime, these parameters permit the application of an efficient algorithm based on numerical integration of a system of nonlinear differential equations describing the calculated characteristics by the Euler method. The problem is best solved on a digital computer. The algorithm does not use successive approximations and, consequently, the problem of convergence of the calculation process is nonexistent. It is especially efficient as applied to complex circuits with many nonlinear elements where the convergence conditions complicate the application of iteration methods. The application of the proposed parameters of nonlinear elements leads to a simple and convenient method of determining the stability of the equilibrium points of the periodic regimes of nonlinear circuits. Whereas the determination of the conditions of aperiodic instability of complex circuits by analyzing their differential equations by the method proposed by Van der Pool for a second-order equation requires an individual approach to each structure of the electric circuit, the described method is the same for circuits of any order and with any number of nonlinear elements.

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USING A DIGITAL COMPUTER FOR CALCULATING THE ANGULAR CHARACTERISTICS OF SATURATED, PHANEROPOLAR, SYCHRONIC MACHINES -U-

AUTHOR-(03)-SALAYAK, I.I., FILTS, R.V., GULKHIVSKIY, L.I.

COUNTRY OF INFO--USSR

SOURCE--MINSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY: ENERGETIKA, NO 2, 1970, PP 1-5

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DIGITAL COMPUTER, ANGLE MEASURING INSTRUMENT, SYNCHRONOUS GENERATOR, MAGNETIC SATURATION, MAGNETIC FIELD/(U)RAZDANZ DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1695 STEP NO--UR/0143/70/000/002/0001/0007

CIRC ACCESSION NO--AT0123519

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0123519

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PRESENTED FOR CALCULATING THE ANGULAR CHARACTERISTICS OF THE ACTIVE AND REACTIVE CAPACITIES OF A PHANEROPOLAR, SYNCHRONIC MACHINE. THE METHOD TAKES INTO CONSIDERATION SATURATION OF POLES, ARMATURE YOKE AND TOOTH ZONE, VARIABLE AIR GAP, AND THE DISTRIBUTION OF THE WORKING MAGNETIC FIELD ALONG THE POLAR DIVISION. THE CALCULATION WAS CARRIED OUT BY THE NUMERICAL METHOD ON A DIGITAL COMPUTER ACCORDING TO ANGULAR CHARACTERISTIC EQUATIONS IN DIFFERENTIAL FORM. A COMPARISON IS GIVEN OF CHARACTERISTICS CALCULATED ON THE "RAZDAN-2" DIGITAL COMPUTER AND THOSE OBTAINED EXPERIMENTALLY.

UNCLASSIFIED

USSR UDC: 621.373.531.1(088.8)

FIL'TSER, I. G.

"A Slave Multivibrator"

USSR Author's Certificate No 272359, filed 1 Apr 68, published 9 Sep 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G263 P)

Translation: This Author's Certificate introduces a slave multivibrator based on transistors of different types with resistive collector-base connections. The device contains resistors, stabilitrons, a time-mark RC circuit, a separating diode which cuts off the collector circuits of the PNP transistor from the timing capacitor charging circuits, and an additional PNP transistor. To reduce the capacitance of the time-mark condenser while simultaneously cutting down the supply voltage, the base of the additional transistor, which shunts the base-emitter junction of the PNP transistor, is connected to the tie point between the resistor and capacitor of the time-mark circuit, the resistor in this circuit being connected to the collector of the NPN transistor, while the capacitor is connected to the PNP collector through the separating diode.

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Cardiovascular Diseases

UDC 616.12-073.43-073.96

USSR

TUMANOVSKIY, M. N.M PROVOTOROV, V. M., AND FILYAKIN, B. F., Department of Hospital Therapy, Voronezh Medical Institute, and Department of Rigid Body Physics, Voronezh Polytechnic Institute'

"A Method of Remote (Contactless) Phonocardiography and Its Clinical Significance"

Moscow, Kardiologiya, Vol 12, No 6, 1972, pp 84-89

Abstract: Contact between a phonocardiographic sensor and the body surface causes changes in signal characteristics. In addition, occasionally it is impossible to attain the firm contact necessary for reliable recordings. Therefore a concerter has been developed with which recordings can be made with the sensor 5-10 mm away from the body surface. The instrument was tested on healthy individuals and patients with cardiac illnesses. Recordings were compared with contact phonocardiograms. Among healthy individuals the components of I and II sounds were recorded distinctly by the remote method but were not always detected by the contact method. III and IV sounds were detected much more frequently by the remote method. Among patients with tonsillocardiac syndrome the III sound was recorded twice as often by the remote method, while the contact method altered the signals, probably due to

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USSR

TUMANOVSKIY, M. N., et al., Kardiologiya, Vol 12, No 6, 1972, pp 84-89

the damping effect of the sensor's contact with the body. Among patients suffering cardiac failure, mitral valve operation could be distinguished with the remote method and not with the contact method. The remote method was also employed diagnostically on patients with congenital heart diseases. For example, with its employment it was possible to distinguish between rheumatic stenosis of the aortic ostium and coarctation of the aortic isthmus, and not so with the contact method. Thus this remote method is superior to the contact method, particularly with respect to diagnosis.

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USSR UDC 615.471:616-12-008.31-073.96

FILYAKIN, B. F., Voronezh Medical Institute, and PROVOTOROV, V. M., Voronezh Polytehnic Institute

"A Device for Contactless Recording of the Pulse and Kinetocardiogram"

Moscow, Meditsinskaya Tekhnika, No 6, Nov/Dec 71, pp 21-22

Abstract: Most well-known methods of recording the vibration of the chest cage and arterial pulse have a number of serious shortcomings as a result of the need to place sensors directly on the body of the patient. Utilizing the principles embodied in an electrometer tube described in the literature, the authors of the present article developed a contactless recording device. In place of sensors, it uses the capacitor which is formed by the grounded body of the patient and an electrode placed at a distance of two to five millimeters from him. In contrast to other available units, the new device is distinguished by its simplicity. The authors give a sketch of the principal circuit and compare a sample of its output with that from a conventional electrocardiogram.

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UDC 547.241.07

USSR

KNUNYANTS, I. L., BYKHOVSKAYA, E. G., SIZOV, Yu. A., and FILYAKIN, V. A.

"A Method of Making 1,1-Bis-(dialkylphosphino)-4-alkanols-1"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289098, division C, filed 24 Nov 69, published 8 Dec 70, p 78

Translation: This Author's Certificate introduces: 1. A method of making 1,1-bis-(dialkylphosphino)-4-alkanols-1. As a distinguishing feature of the patent, dialkylphosphine is interacted with a 4-carboxylic acid halide in the presence of an organic base such as triethylamine in an organic solvent with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out with boiling of the reaction mixture.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SIGNIFICANCE OF VEGETATIVE ASYMMETRIES IN PATIENTS WITH DIFFUSE TOXIC GOITER -U-

AUTHOR--FILYAYEV, V.A.

F

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 49-52

DATE PUBLISHED--------70

SUBJECT AREAS--BICLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GOITER, OSCILLOGRAPH, BLOOD CHEMISTRY, ENDOCRINOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1852 STEP NO--UR/0475/70/000/006/0049/0052

CIRC ACCESSION NO--AP0129212

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VARIOUS TESTS (OSCILLGRAPHY, A. P., PERIPH. BLOOD LEUCOCYTES, BLOOD SUGAR AND CALCIUM, TEMPERATURE MCCLURE AND ALDRICH TEST, CAPILLAROSCOPY, CAPILLARY RESISTANCE) CARRIED OUT IN 135 PATIENTS WITH DIFFUSE TOXIC GOITER INDICATE THAT THESE PATIENTS SHOWED MORE FREQUENTLY VEGETATIVE ASYMMETRIES THAN HEALTHY PERSONS, THE FREQUENCY AND MEAN VALUES OF THE ASYMMETRIES BEING PROPORTIONAL TO THE SEVERITY OF THE DISEASE. THEY ALSO DEPENDED ON THE FORM OF DIFFUSE TOXIC GOITER. IN "SECONDARY" FORMS ASSOCIATED WITH DISORDERS OF THE CENTRAL NERVOUS SYSTEM VEGETATIVE ASYMMETRIES WERE MORE MARKED AND PROVED RESISTANT TO TREATMENT, INDICATING THE STABLE CHARACTER OF VEGETATIVE DISTURBANCES IN THIS GROUP OF PATIENTS. FACILITY: ENDOKRINOLOGICHESKAYA KLINIKA KHAR'KOVSKOGO INSTITUTA ENDOKRINOLOGII I KHIMII GORMONOV.

UNCLASSIFIED

USSR UDC 616-057:615.33.012.6]-097.3

SOKOLOVA, V. G., and FILYUSHINA, Z. G., Institute of Labor Hygiene and Occupational Diseases, Gor'kiy

"Immunobiological Shifts in Occupational Diseases Caused by Antibiotics"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 10, 1971, pp 24-27

Abstract: Sixty-three female workers in a plant manufacturing penicillin and streptomycin and 24 hospital nurses were examined for sensitivity to these antibiotics and candidiasis antigen. The phagocytic reaction was also studied as an indicator of nonspecific immunity. Thirty-six of the 87 were allergic to the antibiotics and candidiasis antigen. The phagocytic activity of the neutrophils decreased in the first or absorptive phase of the process in 72 of those who had prolonged industrial contact with the antibiotics, but the intensity of digestion increased markedly in the second or digestive phase, apparently in compensation for the initial decrease. The bactericidal properties of blood plasma from those occupationally exposed to the antibiotics were twice as potent as the control. Thus the main factors in the pathogenesis of occupational disease caused by penicillin and streptomycin seem to be sensitization and impairment of immunological reactivity.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810018-9"

Semiconductor Technology

USSR UDC 62-41:669.24

SOROKIN, P. I., NIKOL'SKIY, N. N., and FILYAYEV, V. I.

"On the Possibility of Substituting Alloy 29NK (Kovar) in a Three-Layer Strip"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, Aug 73, pp 73-74

Abstract: In an attempt to find a less expensive material to replace alloy 29NK (kovar) in a three-layer strip (Ni-koval-Ni-Au) used in semiconductor instruments, a search of the literature led the authors to test alloy N43G-VI, which is very similar to 29NK in physical and engineering properties. Dialtometric curves of the selected components and moduli of elasticity were obtained at 100, 200, 300, 400, and 500°C from which the values of elongation growth per unit length of strip Ni-kovar-Ni and Ni-N43G-VI-Ni were calculated and found to be adequately close. Extensive plant tests were conducted on a batch of semiconducting instruments which showed the reliability of operation of the experimental instruments in which the kovar had been replaced by alloy N43G-VI. One figure, five bibliographic references.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--STATISTICAL ANALYSIS OF WIND VELOCITY MEASUREMENTS IN THE NEAR WATER LAYER, STATISTICAL ANALYSIS OF WIND VELOCITY MEASUREMENTS IN NEAR

AUTHOR-(02)-NAVROTSKI, V.V., FILYUSHKIN, B.N.

F

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIVA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 3, 1970, PP 292-298

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ATMOSPHERIC SCIENCES

TOPIC TAGS--WIND VELOCITY, OCEAN, OCEANOGRAPHIC BUOY, ANEMOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1554 STEP NO--UR/0362/70/006/003/0292/0298

CIRC ACCESSION NO--AP0114144

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0114144

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES AN ANALYSIS OF TEMPORAL WIND VELOCITY FLUCTUATIONS RECORDED IN AUGUST 1966 IN THE BLACK SEA FROM A FROUDE BUOY. THE BUOY WAS A CYLINDRICAL BODY 15 CM IN DIAMETER AND 10 M LONG IMMERSED VERTICALLY BY A WEIGHTING DAMPING DEVICE TO A DEPTH OF 9.5 M. ON THE UPPER PART OF THE BUOY THERE WAS A DURALUMIN MAST 4 M HIGH TO WHICH FOUR ANEMOMETERS WERE ATTACHED. THE ANEMOMETERS HAD A TIME CONSTANT OF 0.8 SEC. WIND VELOCITY WAS REGISTERED CONTINUOUSLY AT FOUR HORIZONS ON THE TAPE OF A LOOP OSCILLOGRAPH. OBSERVATIONS WERE MADE 100 M FROM THE WINDWARD SIDE OF THE SHIP. THE BUOY WAS CONNECTED TO THE VESSEL BY A MULTISTRAND CABLE AND A CAPRON LINE. THE ENTIRE SYSTEM WAS AT DRIFT. THE TESTS, MADE WITH PRESSURE SENSORS SUSPENDED TO THE BUOY AT A DEPTH OF 40 M, REVEALED THAT A FROUDE BUOY VIRTUALLY DID NOT MOVE VERTICALLY WITH WAVES UP TO 1.5 M. WIND VELOCITIES WERE DETERMINED AT FOUR FIXED HORIZONS 0.5, A, 2 AND 4 M FROM MEAN SEA LEVEL. TWO SPECTRAL REGIONS WERE INVESTIGATED: FROM 2 TO 10 SECONDS AND FROM 20 TO 100 SECONDS. THE STATISTICAL CHARACTERISTICS OF WIND VELOCITY FLUCTUATUINS AT DIFFERENT HORIZONS FOR DIFFERENT MEAN WIND VELOCITIES ARE COMPARED. FACILITY: INSTITUTE OF OCEANOLOGY.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DENSITY STRATIFICATION IN THE OCEAN -U-

AUTHOR-(03)-MONIN, A.S., NEYMAN, V.G., FILYUSHKIN, B.N.

COUNTRY OF INFO--USSR, PACIFIC OCEAN

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 6, 1970, PP 1277-1279

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--OCEAN DEPTH, FLUID DENSITY MEASUREMENT, OCEAN TEMPERATURE, OCEAN BOTTOM, SALINITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1158 STEP NO--UR/0020/70/191/006/1277/1279

CIRC ACCESSION NO--AT0133181

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/3 010

CIRC ACCESSION NO--AT0133181

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS OF N(Z) STRATIFICATION CURVES WAS MADE (N IS THE FREQUENCY OF INERTIAL OSCILLATIONS, Z IS DEPTH) USING DATA FROM 40 HYDROLOGICAL STATIONS IN THE NORTHERN HALF OF THE PACIFIC OCEAN. THE N(Z) CURVES FOR THE UPPER LAYER OF THE OCEAN HAVE A COMPLEX AND VARIED SHAPE, OFTEN WITH SEVERAL EXTREMA, BUT IN THE INTERNAL LAYERS OF THE OCENA, AT DEPTHS OF 500-5,000 M, THEY ARE WELL DESCRIBED BY A SIMPLE LAY OF DISTANCE FROM THE SURFACE N(Z) EQUALS W EQUALS CONST, (3) THAT IS, THE FREQUENCY N IS INVERSELY PROPORTIONAL TO DEPTH Z. THE LAW GIVEN ABOVE IS UNIVERSAL IN THE SENCE THAT THE CONSTANT W IS APPROXIMATELY THE SAME FOR DIFFERENT STATIONS (IT IS W CONGRUENT M-SEC). FIGURE 2 IN THE TEXT SHOWS N(Z) VALUES FOR THE 40 STATIONS. IN THE NEAR BOTTOM LAYER OF THE OCEAN BELOW THE REGION OF APPLICABILITY OF THE ABOVE LAW THE N(Z) CURVES LOSE THEIR UNIVERSAL SHAPE. SOMETIMES N DECREASES THERE WITH DEPTH MORE RAPIDLY THAN INDICATED BY THE LAW (FOR EXAMPLE, IN STAGNANT BASINS WITH BOTTOM CONVECTION CREATED BY A GEOTHERMAL HEAT FLUX) OR SOMETIMES MORE SLOWLY (FOR EXAMPLE, WHEN THERE ARE COLD WATERS OF ANTARCTIC ORGIN IN THE NEAR BOTTOM LAYER). INSTEAD THE DEPTH Z ONE CAN USE HEIGHT ABOVE THE BOTTOM H EQUALS H-Z (H IS TOTAL OCEAN DEPTH). IN THE CASE OF STABLE STRATIFICATION FOR LARGE H TYPICAL SCALES OF TURBULENT INHOMOGENEITIES ARE OF THE ORDER OF L EQUALS U PRIME3 (GM-P) PRIME NEGATIVE1, WHERE M EQUALS BAR P PRIME W PRIME IS THE VERTICAL TURBULENT FLUX OF MASS (W IS THE VERTICAL VELOCITY, THE PRIME DENOTES FLUCTUATIONS, THE LINE DENOTES STATISTICAL AVERAGING).

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

3/3 010
CIRC ACCESSION NO--AT0133181
ABSTRACT/EXTRACT--THE VELOCITY GRADIENT SINULET U-SINULET H FOR LARGE H ASYMPTOTICALLY APPROACHES THE ORDER OF U-L FOR LARGE H, BUT THE TEMPERATURE AND SALINITY GRADIENTS (DETERMINING THE DENSITY GRADIENT) MUST INCREASE WITH HEIGHT AS 1-ALPHA (H), WHERE ALPHS IS THE RATIO OF THE EXCHANGE COEFFICIENTS FOR HEAT (AND SALT) AND FOR MOMENTUM. THE TRANSPORT OF INHOMOGENEITIES OF THE DIMENSION L WITH THE VELOCITY H SINULET U-SINULET H CREATES A LOCAL FREQUENCY H SINULET U-SINULET H-L. THE RESONANCE CONDITION, ACCORDING TO LONG, IS N EQUALS H SINULET U-SINULET H OVER L (EQUALS AH; A EQUALS 1 OVER L SINULTE U OVER SINULET H SIMILAR TO U OVER L PRIME2), ENSURING THE PROPAGATION OF INTERNAL WAVES IN THE ENTIRE THICKNESS OF THE OCEAN (THIS CONDITION CORRESPONDS TO D (H) SIMILAK TO H PRIME NEGATIVE2). CHECKING OF THE LAW OF DISTANCE FROM THE BOTTON N EQUALS AH REVEALED THAT IT IS SATISFACTORILY SATISFIED FOR MOST OF THE MENTIONED HYDROLOGICAL STATIONS AT DEPTHS BELOW 1-2 KM. THE RESONANCE CONDITION IS NOT UNIVERSAL: THE CONSTANT A FOR DIFFERENT STATIONS IS DIFFERENT (IT VARIES IN THE RANGE (1-9) TIMES 10 PRIME NEGATIVE7 M PRIME NEGATIVE1 TIMES SEC PRIME NEGATIVE1). BY COMBINING LAWS (3) AND (5) ONE OBTAINS A EQUALS W-Z(H-Z). THIS VALUE IS ALMOST CONSTANT (THERE IS LITTLE DEPENDENCE ON Z) IN THE LAYER NEAR THE MAXIMUM OF THE FUNCTION Z(H-Z). THUS, IN THE MIDDLE LAYERS OF OCEAN BOTH (3) AND (5) MAY BE APPLICABLE. FACILITY: INSTITUTE OF OCEANOLOGY.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SENSITIVITY OF SPHERICAL DETECTORS FOR 0.4 EV-10 MEV NEUTRONS --U--

AUTHOR-(05)-ANDREYEVA, L.S., KEIRIMMARKUS, I.B., USPENSKIY, L.N., FILYUSHKIN, I.V., CHERNOV, YE.N.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 72-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON DETECTOR, THERMAL NEUTRON, POLYETHYLENE, NEUTRON SPECTRUM, FAST NEUTRON, VAN DE GRAAFF ACCELERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/1072 STEP NO--UR/0120/70/001/000/0072/0075

CIRC ACCESSION NO--AP0110762
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 023

CIRC ACCESSION NO--AP0110762

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. DATA WERE OBTAINED TO DET. THE SENSITIVITY OF A THERMAL N DETECTOR WITH SPHERICAL POLYETHYLENE MODERATORS (P EQUALS 0.94 G-CM PRIME3) OF DIFFERENT DIMENSIONS (4.86-24.1 G-CM PRIME2) IN THE N ENERGY RANGE FROM THERMAL TO 10 MEV. THE MEASUREMENTS IN THE LOW ENERGY REGION WERE CONDUCTED IN A PULSATING FAST REACTOR ACCORDING TO TIME OF FLIGHT AND IN THE HIGH ENERGY REGION IN A VAN DE GRAAFF ACCELERATOR. OPTIMUM DIMENSIONS WERE SELECTED FOR THE MODERATORS BASED ON THESE MEASUREMENTS. FACILITY: INST. BIOFIZ., MOSCOW, USSR.

UNCLASSIFIED

UDC 669.017:548.73

USSR

FIMKEL', V. A., Nizkotemperaturnaya Rentgenografiya Metallov (Low-Temperature Roentgenography of Metals), Izd-vo "Metallurgiya," Moscow, 1971, 256 pp

Translation of Annotation: Methods and results of the application of the low-temperature X-ray technique for the investigation of the crystalline structure of metals are reported. The low-temperature X-ray technique is widely used in investigations of low-temperature polymorphic conversions in metals, X-ray dilatothermal measurements by low-temperature investigation of electron anomalies in structures of metals, and in the study of various structural effects in low-temperature magnetics and superconductors. It is also used for obtaining various characteristics of phonon spectra of crystals and for the analysis of disturbances of the ideal crystalline structure of metals at low temperatures. The book is intended for a wide circle of readers: scientific workers, engineers, aspirants, and students in higher courses of higher institutes of learning specializing in solid state physics, metal physics, physical chemistry, structural X-ray analysis, metal science, and new branches of metallurgy. Sixty-two tables, 120 illustrs., 249 biblio. refs.

Translation of Table of Contents:

USSR

FIMKEL', V. A., Nizkotemperaturnaya Rentgenografiya Metallov, "Metallurgiya", 1971, 256 pp

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USSR

FIMKEL', V. A. Nizkotemperaturnaya Rentgenografiya Metallov, "Metallurgiya", 1971, 256 pp

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UDC: 621.396.6:621.3.019.3

USSR

FIN, V. A.

"A Method of Estimating Circuit Reliability of Electronic Devices"

Moscow, Radiotekhnika, No 10, 1972, pp 96-97

Abstract: The author of this brief communication asserts that simple experimental methods are preferable to rather complex computational methods for estimating circuit reliability, which he defines as the criticality of the circuits to partial breakdown of their elements and to changes in such destabilizing factors as ambient temperature and voltage supply levels. These experimental methods involve placing the device under test in a thermal chamber and varying the temperature in discrete steps of 5-7° C, then determining the upper and lower limits of permissible supply voltage variations for each step. The experimental points are then plotted on a set of axes with ordinates representing relative voltage changes and abscissae representing relative temperature changes,

USSR

FIN, V. A., Radiotekhnika, No 10, 1972, pp 96-97

and the points are joined by a closed curve representing the boundary of the normalized region of the device's efficiency. The reliability of the device can then be measured by distances in this diagram. A specimen of the diagram is shown and further details of the method given.

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UDC: 534.322.3+534.83

USSR

YEFIMOV, Yu. S., MAKAROV, L. T., MYASNIKOV, L. L., FINAGIN, B. A.

"A Maskless,Fiber-Optics Acoustic Analyzer"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute), 1972, vyp. 77, pp 45-48 (from RZh-Fizika, No 5, May 73, abstract No 5Zh591 by R. I. G.)

Translation: A device is described which is designed for analyzing complex acoustic and electric signals by using a multichannel filter made of fiber light guides. Oscillations are optically fixed by passing light through resonating fibers. The maskless analyzer developed by the authors uses the effect of intensity modulation of light as it passes through vibrating fiber-optics light guides. It is experimentally shown that the maskless analyzer accomplishes linear conversion of a signal over a fairly wide range of dynamic variation.

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1/2 027 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE EFFECT OF CARBOCHOLINE AND ADRENALINE ON LIVER CHOLESTEROL BIOSYNTHESIS IN RATS -U-

AUTHOR--FINAGIN, L.K.

COUNTRY OF INFO--USSR

SOURCE--BYULLETIN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3 PP 72-74

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADRENALINE, RAT, LIVER, CHOLESTEROL, BIOSYNTHESIS, DRUG EFFECT, CHOLINOLYTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0219/70/069/003/0072/0074

PROXY REEL/FRAME--1982/0841

CIRC ACCESSION NO--AP0052275

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 027

CIRC ACCESSION NO--AP0052275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON RATS WITH SUBCUTANEOUS INJECTION OF CARBOCHOLINE (0.01 MG-100 GM OF BODY WEIGHT) AND ACETATE L C PRIME14 (35 MU CU-100 GM OF BODY WEIGHT) IT WAS FOUND THAT LIVER CHOLESTEROL BIOSYNTHESIS FOR 30 AND 60 MINUTES AFTER THE INJECTION WAS SIGNIFICANTLY INHIBITED. ON THE OTHER HAND, ADRENALINE DID NOT CAUSE AN APPRECIABLE CHANGE OF ACETATE

UNCLASSIFIED

UDC 621.771.28

USSR

POTAPOV, I. N., POLUKHIN, P. I., BONDARENKO, Ye. S., YAMPOL'SKIY, V. M., FINAGIN, P. M., and TARTAKOVSKIY, Ye. K.

"Creating High Productivity Cross-Screw Pipe Rolling Mills"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 163-171

Translation: Information is given on the designs of individual and group drives of mills, two- and three-roll working stands, and forward and rear mill tables. Industrial introduction of these designs made it possible to implement new rolling conditions which resulted in a significant rise in the productivity of pipe rolling machines and in improvement in the quality of sleeves and pipes. Five figures and 13 bibliographic entries.

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USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"An Investigation of the Piercing Process on the 30-102-Type Rolling Aggregate"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 130-136

Translation: The article gives results of experimental investigations made on the TPAZO-102 tube-piercing mill of the power parameters of the piercing process in the area of large feeding angles. Measurements are made of the full pressure of the metal on the rolls, the force on the mandrel, the torsional moments, and the piercing power. The data obtained may be used in designing and calculating modern-type rolling aggregates. Six figures.

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USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"An Investigation of Speed Conditions of the Piercing Process in the Area of Increased Feeding Angles and the Quality of Pipes"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 136-142

Translation: The article gives results of experimental investigations conducted on the TPAZO-102 tube-piercing mill of speed conditions of the piercing process with large feeding angles. A significant decrease in machine piercing time with an increase in the feeding angle is established. New conditions for the piercing process are developed which made it possible to improve the quality of sleeves and pipes in terms of surface condition and geometric conditions. Six figures and one table.

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UDC 621.771.28.001.5

USSR

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"Theoretical Developmental Work on the Rolling Process in the Area of Large Feeding Angles"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 158-163

Translation: A theoretical study of the process of cross-screw rolling at large feeding angles is made. It is noted that, in this case, the process has specific features which require a new approach to calibrating the tool and adjusting the mill. Two figures.

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USSR

UDC 536.421.4+536.421.1

FINAGINA, Ye. V.

"Investigating the Effect of Supercooling on the Growth of Primary Crystals"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Minsk, "Nauka i tekhn." 1971, pp 10-15 (from RZh-Fizika, No. 9, 1971, Abstract No. 9Z3e8)

Translation: An investigation is made of the formation of various types of growth of primary Bi and Cd crystals in melts of eutectic systems of Cd-Bi and Sn-Bi with various concentrations of both components. It is shown that, for low supercooling (S) of up to 20° C with isothermic crystallization, primary Bi crystals grow in the shape of polyhedrons. The growth rate (GR) of the polyhedral Bi crystals was measured for various S. It is shown that in the S interval from 3 to 6°, an exponential dependence of the GR of the polyhedral Bi crystals on the S was observed. With an increase in S, the Bi crystals grew in the shape of dendrites. A curve for the GR of Bi dendrites as a function of S is experimentally obtained for Cd-Bi and Sn-Bi alloys of various concentrations. The

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USSR

FINAGINA, Ye. V., Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Minsk, "Nauka i tekhn." 1971, pp 10-15 (from RZh-Fizika, No 9, 1971, Abstract No 9E388)

growth of primary Cd and Sn crystals in alloys of Cd-Bi and Sn-Bi systems containing 25, 30, and 35% Bi, when investigated, showed that in the S interval of 1 to 50°, only dendrite growth was observed. The GR of the Cd dendrites was determined for various S. It was established that the curve for the GR for Bi and Cd dendrites as a function of S is quadratic.

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